



## **A scanning bi-static SODAR for near-surface flux measurements**

**S. Bradley** (1,2), P. Behrens (1), S. von Hunerbein (2)

(1) University of Auckland, New Zealand (s.bradley@auckland.ac.nz), (2) University of Salford, UK

An acoustic profiler has been designed having a central vertically transmitted pulse and six spatially separated microphone arrays as receivers. Atmospheric echoes are recorded individually on each of the microphones in each microphone array, and subsequent beam forming performed via phase shifting in memory. The microphone arrays are placed at 120 degree angular separations at two distances from the transmitter. This gives the facility for tracking the acoustic pulse, as well as obtaining profile information on both turbulent temperature and velocity structure functions. Furthermore, since a single atmospheric volume is simultaneously sampled by all six receivers at any instant, it is possible to derive momentum flux information not normally available with mono-static SODAR arrangements. We present design details as well as early field results. The prospect of temperature profiling, via tracking the acoustic pulse propagation, is also discussed.